Remarks

Claims 3, 5, 7, 9-12 and 14 were previously amended in Applicants' preliminary amendment co-filed with the present application.

Claims 11 and 14 are herein canceled. Claims 1-10 and 12-13 remain pending in the application. No new matter has been added, and no new material presented that would necessitate an additional search on the part of the Examiner.

Claim Objections

The Office Action on page 2, ¶1 objects to claims 11 and 14 under 37 C.F.R. 1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicants herein cancel claims 11 and 14. Therefore this objection is moot, and can properly be withdrawn.

Issues under 35 U.S.C. §102(e)

The Office Action on page 2, ¶3 rejects claims 1-4 and 10-14 as being anticipated by Kim (U.S. Patent Application Publication Number 2002/0117668, filed February 8, 2002). Claims 11 and 14 are herein canceled therefore rejection of these claims is moot.

Prior to analyzing the art cited in the Office Action, Applicants believe that a brief description of the subject matter of independent claim 1 would be of use to the Examiner.

Claim 1 is directed to a method for manufacturing a micro-electromechanical device. A first electroconductive layer in which a first electrode is formed, a first electroinsulating layer of a first material, a second electroinsulating layer of a second material different from the first material, and a second electroconductive layer in which a second electrode lying

opposite the first electrode is formed, are consecutively deposited on a substrate. The second electroconductive layer, the second electrode, the first electrode, and the first insulating layer form the device.

After the second conductive layer is deposited, the second insulating layer is removed by means of an etching agent. The etching agent is selective with respect to the material of the second conductive layer, and is characterized in that the first material and the second material are selected materials that can be etched only limitedly selectively with respect to each other. For depositing the second insulating layer on top of the first insulating layer, a further layer is deposited. The further material of the further layer can be etched selectively with respect to the first material.

The legal standard for rejection of a claim under 35 U.S.C. §102 is identity. Applicants show below that the subject matter in the cited reference is not the same as that of pending claim 1.

Kim, U.S. patent application publication number 2002/0117668, filed February 8, 2002

Kim shows an X-ray image sensor with a thin film transistor (TFT) array, and a method for fabricating the same. See Kim, U.S. patent application number 2002/0117668, ¶ [003] as published.

In Kim, a first metal layer is deposited on a substrate. The first metal layer forms a gate electrode. See Kim, ¶ [0049] as published and FIG. 5a. The first insulation film is deposited over the substrate. Next, a dual layer semiconductor film made of pure amorphous silicon film and doped amorphous silicon film is deposited. Ibid., ¶ [0050] as published and FIG. 5b. Next, a second metal layer is formed for source and drain electrodes, which is

deposited on the semiconductor layer and the first insulation layer. A ground line is also formed on the first insulation layer. Ibid., ¶ [0051] as published and FIG. 5c. Next, a portion of the doped amorphous silicon film is removed using the source and drain electrodes as masks, defining a channel region and completing a thin film transistor (TFT). Ibid., ¶ [0052] as published and FIG. 5c. A second insulation film is formed over the TFT and the ground line. First and second contact holes are then formed through the second insulation film, exposing the ground line and a portion of the source electrode respectively. Ibid., ¶ [0054] as published and FIG. 5d. A first capacitor electrode and an electron transport electrode are then formed on the second insulation film. The electron transport electrode electrically contacts the source electrode, and the first capacitor electrode electrically contacts the ground line. Ibid., ¶ [0055] as published and FIG. 5d.

Next, a dielectric layer is formed over the second insulation film, the first capacitor electrode, and the electron transport electrode. A third contact hole is then formed through the dielectric, exposing a portion of the electron transport electrode. Ibid., ¶ [0057] as published and FIG. 5e. Next, a pixel electrode is formed on the dielectric layer. The pixel electrode is electrically connected with the electron transport electrode. The first capacitor electrode, the pixel electrode, and the dielectric layer comprise the storage capacitor (Cst). Ibid., ¶ [0057] as published and FIG 5e. Next, a light-sensitive material is deposited. Ibid., ¶ [0058] as published and FIG 5f. A transparent conductive electrode that transmits X-ray is formed over the light-sensitive material. Ibid., ¶ [0059] as published.

The invention of the present claims is not the same as the cited art

In contrast to Kim, the present claims are directed to a micro-electromechanical device and a method for forming the device.

Kim's methods for manufacturing the X-ray image sensor differ from the process of forming the device that is the subject matter of Applicants' claim 1. Kim's device shows depositing a first insulating film, followed by depositing a dual-layer semiconductor film, followed by depositing a second insulating film. In contrast, the subject matter of Applicants' claim 1 for forming a device is depositing a first electroconductive layer, followed by a first electroinsulating layer, followed by a further layer, followed by a second electroinsulating layer, followed by a second electroconductive layer.

Thus, in contrast to the subject matter of claim 1, the first step in Kim's method of manufacturing the device shows forming a thin film transistor (TFT), which includes a gate electrode, a first insulating film, a drain electrode, and a source electrode. Kim's device then forms a dual layer semiconductor film made of pure amorphous silicon film and doped amorphous silicon film. See Kim, ¶[0050] and FIG. 5b. Kim's device also uses a storage capacitor (Cst).

Applicants note with appreciation that the Office Action considered allowable the subject matter of claims 5-9 as previously presented, except for dependency on a rejected claim. As the subject matter of claim 1 is not the same as Kim, and as claims 2-10 and 12 depend directly or indirectly from claim 1, therefore none of the claims are anticipated by the cited reference.

Applicants assert that the present claims comply with 35 U.S.C. §102(e), and respectfully request that rejection of claims 1-10, 12 and 13 be withdrawn.

Summary

On the basis of the foregoing reasons, Applicants respectfully submit that the pending claims are in condition for allowance, which is respectfully requested.

If there are any questions regarding these remarks, the Examiners are invited and encouraged to contact Applicants' representative at the telephone number provided.

Respectfully submitted,

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